

REMARKS

Claims 1-30 were pending in this application as of the September 25, 2003 mailing date of this office action, and were rejected pursuant to 35 U.S.C. §103(a). The September 25, 2003 office action also includes an objection to the Abstract of the Disclosure, as filed.

As indicated above, Applicant has amended claims 11 and 22 to include, respectively, the features of claim 12 and 23, which, therefore, are canceled. Applicant notes, for the record, that the amendments to claims 11 and 22 are being made solely to expedite allowance of this application. By amending these claims, Applicant does not acquiesce to their rejection, or to the reasons offered by the Examiner in support of their rejection. Also, by amending claims 11 and 22, Applicant does not dedicate the subject matter of these claims - as filed - to the public. Moreover, Applicant reserves the right to seek patent protection for one or more claims that are similar or identical to either or both of these claims - as filed - in a related application.

Additionally, new claims 31-36 have been added herein to seek patent protection for additional embodiments of the present invention. Claims 31 and 35 are identical, respectively, to claims 1 and 20, except that claims 31 and 35 recite that the quantity of water that is purified is stored in a non-metallic container. No new matter is added in new claims 31 and 35 (nor in dependent claims 32-34 and 36-38), support for which is provided throughout this application, as filed, including, *inter alia*, page 7, lines 20-28 and page 12, lines 25-28.

Applicant submits that the pending rejections and objections (both of which are discussed below) are either overcome or rendered moot in view of at least the amendments set forth above and/or the remarks that follow.

The Objection to the Abstract

The Examiner objects to the Abstract of the Disclosure that was filed with this application because the Abstract of the Disclosure allegedly "lacks sufficient detail such as identifying advantages of particular activation temperatures for the alumina."

Applicant believes that the Examiner's objection is inappropriate and that the Abstract of the Disclosure for this application, as filed, complied with all applicable rules. However, solely in order to expedite allowance of this application, Applicant has deleted the Abstract of the Disclosure, as filed, and replaced it with a new Abstract that Applicant believes addresses the points raised by the Examiner in his objection.

Applicant submits that the objection to the Abstract of the Disclosure has been overcome, and respectfully requests that the Examiner withdraw the objection.

The 35 U.S.C. §103 Rejections

Claims 1-30 are rejected pursuant to 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,608,247 to Heinig (hereinafter referred to as "the '247 patent") in view of both U.S. Patent No. 5,352,369 to Heinig (hereinafter referred to as "the '369 patent") and U.S. Patent No. 6,471,876 to Hansen et al. (hereinafter referred to as "the '876 patent").

Applicant respectfully traverses this rejection, which is inappropriate because the features of claims 1-11, 13-22 and 24-30 are neither taught nor suggested by the cited references, and in further view of the unexpected, highly beneficial results that are achieved in accordance with the claimed invention.

Pending claims 1-11 and 13-19 recite a treatment medium comprising an alumina substrate that has been heated to a temperature in the range of 300°F to 375°F, and pending claims 20-22 and 24-30 recite a method of forming a treatment medium that includes the step of heating an alumina substrate to a temperature in the range of 300°F to 375°F for a predetermined amount of time.

On page 3 of the September 25, 2003 office action, the Examiner asserts that the '247 patent discloses heating an alumina substrate to approximately 400°F, but acknowledges that neither the '247 patent nor the '369 patent discloses heating an alumina substrate to a temperature in the range of 300°F to 375°F. However, the Examiner further contends that the '876 patent teaches "that activation temperatures of substrates utilized within sterilizing or germicidal filters may vary widely depending upon desired end properties of the medium/filter."

Scrutiny of the portions of the '876 patent cited by the Examiner reveals that the cited text does not disclose or suggest any specific temperatures for heating an alumina substrate onto which a quantity of silver is to be deposited. In fact, the only discussion of temperatures within the cited text of the '876 patent appears to state that "the filtrate is dried and cured at an elevated temperature " (see column 2, lines 52-53), and that "temperature and rotation are the variables during firing that are

used to adjust the specific gravity of the material, as well as to produce different sizes of filtration material" (see column 11, lines 31-33).

Therefore, contrary to the Examiner's assertion, the cited text of the '876 patent does not broadly state that activation temperatures of substrates utilized within sterilizing or germicidal filters may vary widely depending upon desired end properties of the medium/filter. Instead, it merely implies that specific gravity and/or filtration material size may be influenced by a combination of temperature and rotation, and that the filter is dried and cured at an elevated temperature. There is no mention in the '876 patent of the heating of an alumina substrate in the range of 300°F to 375°F, let alone thereafter depositing a quantity of silver onto the heated alumina substrate.

What's more, the '247 patent specifically touts the benefits of heating alumina to a temperature above 400°F. ("Preferably, the alumina is activated by heating it to a temperature of greater than approximately 400 degrees fahrenheit to provide an improved bond between the alumina and the silver . . . "). There does not appear to be any discussion/suggestion in the '247 patent (or the '369 patent) of heating alumina to a temperature *less than* 400°F, let alone of whether similar benefits would be realized if that were to occur. Thus, the advantages of the invention described in the '247 patent would appear to one of ordinary skill in the art to be specifically tied to heating alumina *above* 400°F.

In view of the content of the cited references, Applicant respectfully submits that the Examiner's combination of references is not sufficient to establish a *prima facie* case of obviousness.

Simply put, the limited, generalized disclosure of the '876 patent, when coupled with the disclosure of the '247 patent and/or the '369 patent, does not provide the teaching and motivation to one of ordinary skill in the art to produce the claimed invention. And absent such teaching, suggestion, or incentive in the prior art, there can be no support for a *prima facie* case of obviousness. See, e.g., *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 USPQ 929, 933 (Fed. Cir. 1984). In particular, one of ordinary skill in the art would not be motivated by the cited references to produce a treatment medium whereby an alumina substrate is heated to a temperature in the range of 300°F to 375°F. The '247 patent specifically touts the benefits of heating alumina substrate to a temperature of *above* 400°F, and the '876 patent merely notes that a filtrate is "dried and cured at an elevated temperature" and that specific gravity and/or filtration material size may be influenced by a combination of temperature and rotation.

If anything, the '876 patent appears to teach one of ordinary skill in the art away from heating an alumina substrate below the 400° threshold touted by the '247 patent. And has long been held by the Court of Appeals for the Federal Circuit, teaching away from a claimed invention is the antithesis of suggesting that invention. See, e.g., *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). And what further demonstrates the non-obviousness of the claimed invention are the highly unexpected, beneficial results (see pages 13-17 of the application) that stem from the alumina substrate being heated to a temperature in the range of 300°F to 375°F. See, e.g., *In re Soni*, 34 USPQ2d 1684 (Fed. Cir. 1995) (evidence that a claimed invention possesses a surprising result versus those expected by one of ordinary skill in the art is a strong indication of the non-obviousness of the claimed invention).

In sum, the cited references do not establish a *prima facie* case of obviousness, because they do not disclose/suggest - to one of ordinary skill in the art at the time of invention of the claimed subject matter - a treatment medium (or a method of forming a treatment medium) comprised of an alumina substrate that has been heated in the range of 300°F to 375°F, and onto which a quantity of silver is deposited.

Applicant also respectfully points out that the Examiner does not appear to have cited (and Applicant has not located) any language in any of the cited references to support the rejection of claims 2, 11, 13-19, 22 and 24-30, each of which recites that the quantity of silver that is deposited onto the alumina substrate is sufficient to release a concentration of silver in the range of about 50 parts per billion to 100 parts per billion to water that is treated by the treatment medium. As noted on page 12, lines 6-11 of this application, other patents recommend not exceeding a 50 parts per billion threshold of silver ions, due to concerns that humans would not be able to safely tolerate such levels. However, in accordance with the present invention, it was observed that it appears to be safe to include up to 100 parts per billion (ppb) of silver in water, and that levels of 50 ppb to 100 ppb of silver beneficially provide an increased immediate and residual germicidal effect to water.

Thus, claims 2, 11, 13-19, 22 and 24-30 are patentable over the cited references not only because they call for heating an alumina substrate to a temperature in the range of 300°F to 375°F, but also because they recite that a quantity of silver that is deposited onto the heated alumina substrate is sufficient to release a concentration of silver in the range of about 50 parts per billion to 100 parts per billion to water that is treated by the treatment medium.

Regarding new claims 31 and 35, these claims are patentable over the cited references for the reasons discussed above with respect to claims 1 and 20, and for the added reason that they recite that the water being purified is for storage in a non-metallic container, since that feature does not appear to be disclosed or suggested by the cited references. Various additional features of the non-metallic container are described in new dependent claims 32-34 and 36-38, each of which also is patentable over the cited references.

In view of the amendments and/or remarks set forth herein, Applicant respectfully requests reconsideration and allowance of claims 1-11, 13-22 and 24-30 of this application, as well as initial consideration and allowance of new claims 31-38.

If the undersigned can be of any assistance in advancing the prosecution of this case, the Examiner is invited to contact him using the information provided below.

Date:

January 16, 2004

Respectfully submitted,

By:


Richard J. Roos, Reg. No. 45,053
EDWARDS & ANGELL, LLP
P.O. Box 9169
Boston, MA 02209
Tel: 617-439-4444
Fax: 617-439-4170
Email rroos@edwardsangell.com